STAGE OF WATER IN RIVERS AND HARBORS.

The following table shows the danger-point at the several stations; the highest and lowest water during September, 1890, with the dates of occurrence and the monthly ranges:

Heights of rivers above low-water mark, September, 1890 (in feet and tenths).

Stations.	Danger-point on gauge.	Highest water.		Lowest water.		Monthly range.
		Date.	Height.	Date.	Height.	
Red River.						
Shreveport, La	29.9	30	5.2	7	2.2	3.0
Arkansas River.						
Fort Smith, Ark	22.0	19	10.6	15	2.7	7.9
Little Rock, Ark	23.0	26	15.6	10, 11	6.1	9.5
Missouri River.						
Fort Buford, N. Dak	.....	10	3.3	30	0.8	2.5
Sioux City, Iowa	.....	1	5.9	24	4.1	1.8
Omaha, Nebr	18.0	15	7.6	25, 26, 28, 29	6.4	1.2
Kansas City, Mo	21.0	1	6.2	30	4.6	1.6
Mississippi River.						
Saint Paul, Minn	14.5	9, 10	2.3	29	1.6	0.7
La Crosse, Wis	13.0	11 to 15	5.0	1	3.5	1.5
Dubuque, Iowa	16.0	15, 16	5.9	2	3.7	2.2
Davenport, Iowa	15.0	17	3.6	3	2.2	1.4

Heights of rivers—Continued.

Stations.	Danger-point on gauge.	Highest water.		Lowest water.		Monthly range.
		Date.	Height.	Date.	Height.	
Mississippi River—Continued.						
Keokuk, Iowa	14.0	19, 20	3.4	3, 4	2.0	1.4
Saint Louis, Mo	32.0	22 to 24	8.3	18, 19	6.9	1.4
Cairo, Ill	40.0	24-25	20.4	13	10.5	9.9
Memphis, Tenn	34.6	27 to 29	16.0	1, 2, 15	8.5	7.5
Vicksburg, Miss	41.0	30	21.6	1, 2	10.2	11.4
New Orleans, La	13.0	30	5.3	1, 19	3.8	1.5
Ohio River.						
Pittsburgh, Pa	22.0	14	15.2	4	2.8	12.4
Parkersburgh, W. Va	38.0	15	27.2	5	4.9	22.3
Cincinnati, Ohio	50.0	18	35.2	7	11.1	24.1
Louisville, Ky	25.0	18, 19	12.5	7, 8	6.4	6.1
Cumberland River.						
Nashville, Tenn	40.0	17	15.0	9	2.6	12.4
Tennessee River.						
Chattanooga, Tenn	33.0	1	7.6	9, 10	2.8	4.8
Monongahela River.						
Pittsburgh, Pa	29.0	14	15.2	4	2.8	12.4
Savannah River.						
Augusta, Ga	32.0	30	24.2	21	6.5	17.7
Willamette River.						
Portland, Oregon	15.0	1	4.1	23, 24	0.9	3.2

ATMOSPHERIC ELECTRICITY.

AURORAS.

Auroras were reported as follows: 3d, Mount Washington, N. H.; Northfield, Vt.; and Salem Corners, Pa. 8th, Medford, Minn. 10th, Cresco, Iowa; Orono, Me.; and Madison, Wis. 11th, Detroit and Manton, Mich.; Madison, Iowa; Orono, Me.; Madison and Potosi, Wis. 12th, Webster, S. Dak. 14th, Bar Harbor, Me. 15th, Webster, S. Dak. 16th, Mount Washington, N. H.; Cresco, Iowa; and Madison, Wis. 18th, Mount Washington, N. H. 19th, Mount Washington, N. H.; Fort Buford, N. Dak.; Huron, Webster, and Wolsey, S. Dak.; Cresco, Iowa; Orono and Bar Harbor, Me.; Newburyport, Mass.; and Embarrass, Wis. 20th, Kent's Hill, Me. 21st, Webster, S. Dak. 28th, Columbus, Ohio. 30th, Mount Saint Mary's, Md.

Fort Buford, N. Dak., 19th: an aurora was first observed 10.53 p. m., at altitude about 8°, and extended over 50° of azimuth between north and east. The arch was about 2° in width and of a light gray color. The arch continued to rise and extend and increase in brightness until 12.50 a. m., 20th, when it attained its maximum intensity, reaching altitude about 55°, and covered about 75° of azimuth. The color was white and continued so until 1.20 a. m., when it became dimmer, with the arch irregular and receding. The dark segment was well defined during part of the display. At 2 a. m. only a few traces remained visible. No streamers or material changes were observed during the entire display.

Columbus, Ohio, 28th: an aurora was visible from 9 p. m. to 10.30 p. m.; it consisted of a narrow band of pure white light with well-defined edges, about 5° wide, forming an arch rising to altitude about 80°, and extending from about 90° to 270° azimuth. There was a slow flow and ebb of the light, moving from west to east through the band, about doubling the brightness at the crest of the flow. There was an indefinite show of white light low down about the north part, too faint to be more than barely noticeable. The moon was shining with unusual brilliancy and prevented a view of the greater portion of the aurora where the latter was faint.

THUNDER-STORMS.

The more severe thunder-storms of the month are described under "Local storms." East of the Rocky Mountains thunder-storms were reported in the greatest number of states, 35, on the 5th; in 20 to 28 on the 6th, 7th, 8th, 12th, 13th, 15th, and 16th; in 10 to 19 on the 1st to 4th, 9th, 10th, 11th, 14th, and 18th to 24th; and in 4 to 9 on the 25th to 30th.

East of the Rocky Mountains thunder-storms were reported on the greatest number of dates, 30, in Fla.; on 20 to 24 in Ga., La., Miss., and S. C.; on 10 to 19 in Ala., Ill., Iowa, Kans., Md., Mich., Minn., Mo., Nebr., N. Y., N. C., Ohio, Pa., S. Dak., Tenn., Tex., Va., and Wis.; and on 3 to 9 in Ark., Conn., D. C., Ind., Ind. T., Ky., Mass., Mont., N. H., N. J., N. Dak., R. I., Vt., and W. Va. West of the Rocky Mountains thunder-storms were reported as follows: Ariz., 1st, 2d, 3d, 5th to 9th, 14th to 17th, 22d, 23d, 24th, and 30th; Colo., 1st, 2d, 3d, 6th, 8th, 10th, 13th, 16th, 20th, 21st, and 23d to 26th; Cal., 19th, 21st, 24th, and 26th to 29th; Idaho, 30th; Nev., 25th, 26th, 28th, and 29th; N. Mex., 3d, 5th, 13th, 22d, 27th, and 30th; Oregon, 28th and 30th; Utah, 1st, 2d, 5th, 10th, 11th, 16th, 19th, 22d, 25th, 29th, and 30th; Wash., 2d; Wyo., 2d. There were no states or territories in which thunder-storms were not reported.

MISCELLANEOUS PHENOMENA.

DROUGHT.

Drought prevailed in a large part of the northeast section of Missouri during the month, and, in connection with the dry weather of previous months, resulted in short crops, excepting wheat. Water for stock was scarce and poor, and land dry and difficult to prepare for fall seeding. A report from Nodaway Co., northwest Missouri, stated that water for stock was failing, and the ground too dry to plow. In east-central and southeast Iowa streams were reported low, water for stock scarce, and the ground dry. A report from Independence, southeast Kansas, stated that creeks and pools that were not dried up were lower than ever before, and that water for stock was very scarce. At Howe, southeast Nebraska, the drought was broken on the 7th. At Wolsey and Woonsocket, southeast South Dakota, streams and wells were reported going dry, and the ground drier than in 10 years. At Marshall and Montevideo, southwest Minnesota, drought continued during the month, streams were reported lower than for 13 years, and at Marshall the Redwood River was dry. At North Lewisburgh, west-central Ohio, the drought was broken on the 4th. At Staunton, north-central Virginia, the drought was broken on